
UNIVERSITI SAINS MALAYSIA

Final Examination
Academic Session 2008/2009

April 2009

JIB 315 – COMPARATIVE VERTEBRATE ANATOMY
[ANATOMI VERTEBRATA PERBANDINGAN]

Duration : 2 hours
[Masa : 2 jam]

Please ensure that this examination paper contains **TWO** printed pages before you begin the examination.

Answer **FOUR** questions. You may answer **either** in Bahasa Malaysia in English.

All answers must be written in the answer booklet provided.

Each question is worth 25 marks and the mark for each sub question is given at the end of that sub question.

*Sila pastikan bahawa kertas peperiksaan ini mengandungi **DUA** muka surat yang bercetak sebelum anda memulakan peperiksaan ini.*

*Jawab **EMPAT** soalan. Anda dibenarkan menjawab soalan **sama ada** dalam Bahasa Malaysia atau Bahasa Inggeris.*

Setiap jawapan mesti dijawab di dalam buku jawapan yang disediakan.

Setiap soalan bernilai 25 markah dan markah subsoalan diperlihatkan di penghujung subsoalan itu.

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1. (a) Discuss the characteristics of the Phylum Chordata.
Bincangkan ciri-ciri Filum Chordata.

[10 marks]

(b) Discuss 5 pioneers in the study of vertebrate anatomy.
Bincangkan 5 orang perintis dalam kajian anatomi vertebrata.

[15 marks]
2. Compare the structures of the integument amongst fish, amphibia, reptilia and mammals.
Bandingkan struktur-struktur integumen antara ikan, amfibia, reptilia dan mamalia.

[25 marks]
3. The digestive systems of vertebrates are varied, depending on the feeding habits of the species. Compare the digestive systems between lamprey, frog, pigeon and monkey.
Sistem penghadaman haiwan vertebrata adalah pelbagai, bergantung pada tabiat pemakanan spesies itu. Bandingkan sistem penghadaman antara lampri, katak, merpati dan monyet.

[25 marks]
4. Discuss the basic pattern of the aortic arches in a vertebrate embryo and then compare the aortic arches of the adults of teleost, reptile and bird.
Bincangkan pola asas lengkungan aorta pada embrio vertebrata, kemudian bandingkan lengkungan aorta dewasa bagi teleost, reptilia dan burung dewasa.

[25 marks]
5. Do a comparative study of the reproductive systems of the classes Agnatha, Osteichthyes, Aves and Mammalia.
Buat kajian perbandingan sistem pembiakan antara kelas Agnatha, Osteichthyes, Aves dan Mamalia.

[25 marks]